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PASSIVE CONTROL OF FUEL CONCENTRATION IN A LIQUID FEED FUEL CELL

Abstract

In a liquid feed fuel cell system, substantially pure fuel needs to be added to a dilute mixture of fuel in water so as to maintain the fuel concentration at an appropriate level for use with the fuel cell system. Under passive control of the fuel concentration, a first equilibrium concentration is established between the substantially pure fuel and a fuel transfer medium. A second equilibrium concentration is then established between the fuel transfer medium and the dilute mixture for use with the fuel cell system. The system is "passive" as it does not rely on the measurement of the fuel concentration and direct injection of fuel. The fuel transfer medium can be solid, liquid or gas.